

Claims

[1] An applicator for supplying a fluid from a fluid occlusion element to an applying part, comprising:

5 a hollow rear barrel accommodating the fluid occlusion element;

a fluid occlusion element receiver at least opposing the end portion of the fluid occlusion element;

a hollow-formed see-through front barrel to be attached to an opening of the rear barrel;

10 an essentially transparent detection tube inserted in the front barrel;

a joint core supported by the detection tube and put in contact with the fluid occlusion element; and

15 a pen core, supported by the detection tube, spaced with a clearance from, and opposing, the joint core, and exposed from the front barrel.

[2] The applicator according to Claim 1, wherein the fluid is an alcohol-based ink.

[3] The applicator according to Claim 1 or 2, wherein the
20 rear barrel is formed as a close-bottomed cylinder having an open front end, and part of the inner peripheral surface of the rear barrel is formed with a large-diametric inner peripheral surface and the remaining part of the inner peripheral surface of the rear barrel is formed with a
25 small-diametric inner peripheral surface.

[4] The applicator according to Claim 1, 2 or 3, wherein the fluid occlusion element receiver is formed of a hollow stepped shape, and the fluid occlusion element receiver is inserted into the opening of the rear barrel so as to fit with the front end part of fluid occlusion element.

[5] The applicator according to any one of Claims 1 to 4, wherein among the front barrel, detection tube, joint core and pen core, at least the detection tube, joint core and pen core are integrated.

[6] The applicator according to any one of Claims 1 to 5, wherein the front barrel is given in a transparent stepped shape and fitted into the front end part of the fluid occlusion element receiver.

[7] The applicator according to any one of Claims 1 to 6, wherein the detection tube is formed in a cylindrical shape and supported by the fluid occlusion element receiver and the front barrel.

[8] The applicator according to any one of Claims 1 to 7, wherein a press-fitting portion is formed on one of the inner peripheral surface of the front barrel and the outer peripheral surface of the detection tube and a press-fitted portion is formed on the other, and these press-fitting portion and press-fitted portion are at least put in strong contact with each other.

[9] The applicator according to any one of Claims 1 to 8,

wherein the pen core is given in an essentially cylindrical form and the maximum width portion thereof is fitted into the detection tube.

5 [10] The applicator according to any one of Claims 1 to 9, wherein the detection tube is formed with the fluid occlusion element receiver.

10 [11] The applicator according to Claim 10, wherein a flange is projected radially outwards from the fluid occlusion element's side end of the detection tube, and the flange is adapted to constitute the fluid occlusion element receiver.

15 [12] The applicator according to any one of Claims 1 to 11, wherein the front end part of the front barrel is formed to be a small-diametric tapered portion that gradually becomes narrower, an attachment groove is formed on the exposed surface of the pen core that is exposed from the detection tube so that a fall stopper is provided in the attachment groove, and the pen core is projected from the small-diametric tapered portion of the front barrel while the fall stopper of the pen core is put in contact with inner surface of the
20 small-diametric tapered portion.

25 [13] The applicator according to Claim 12, wherein a flange is projected radially outwards from the fluid occlusion element's side end of the detection tube, and a cylindrical portion is extended towards the fluid occlusion element from the peripheral edge of the flange so that the flange and the

cylindrical portion constitute the fluid occlusion element receiver.

[14] The applicator according to any one of Claims 1 to 13, wherein the fluid occlusion element receiver is formed in an essentially cylindrical form, and the fluid occlusion element receiver is inserted into the rear barrel to fit the end of the fluid occlusion element while an anti-dew-condensation hole is formed in the peripheral wall of the fluid occlusion element receiver.

[15] The applicator according to Claim 14, wherein fine indentations and projections that produce capillary action is formed on the peripheral wall of the fluid occlusion element receiver, and the pattern is formed with indentations, projections and/or essentially V-shaped sections.

[16] The applicator according to any one of Claims 1 to 15, wherein an impact absorbing means that at least absorbs impacts acting on the detection tube is provided.

[17] The applicator according to Claim 15, wherein the impact absorbing means is given as an inclined step face formed between the large-diametric inner peripheral surface, and the small-diametric inner surface, of the rear barrel so as to be in contact with the rim of the opening of the fluid occlusion element receiver.

[18] The applicator according to Claim 15, wherein the impact absorbing means is comprised of a step face between the

large-diametric inner peripheral surface, and the small-diametric inner surface, of the rear barrel, and a cushioning element disposed between the step face and the rim of the opening of the fluid occlusion element receiver.

5 [19] The applicator according to Claim 15, wherein the impact absorbing means is given as the rear barrel having elasticity.